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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,924	08/02/2001	Masayuki Akagawa	991426A	4827

23850 7590 05/22/2002

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EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,924

Applicant(s)

AKAGAWA ET AL.

Examiner

Henry Hung V Nguyen

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2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/458,807.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Abstract

1. The abstract of the disclosure is objected to because it merely a recitation of the structural limitations. The examiner respectfully request the applicant to amend the abstract so that it reflects the purpose of a method of storing an optical device as recited in the instant application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 50-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 50, it is not clearly understood how the contaminating material (after removed from the surface of each of the optical element) are discharged from the barrel ? The recitation of "after the contaminating... from the barrel" is vague and indefinite.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 50, 54-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (U.S.Pat. 4,616,908) in view of Engelsberg (U.S.Pat. 5,821,175).

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With respect to claim 50, 54-57 King (fig. 1 and 2) discloses an exposure apparatus comprising: a projection optical system having a barrel with plurality of optical elements disposed therein (see fig.2). King further teaches the spaces between the elements in a projection lens are filled with an inert gas at a predetermined pressure.

With respect to claims 58-59, although King does not specifically disclose an alignment device for detecting the alignment marks formed a mask or a substrate as well as the measurement device for measuring the characteristic of the projection optical system. However, these elements are well known in the art and thus they would not have involved any inventive steps. Thus, King discloses substantially all basic features of the instant claims except for using an irradiation light for removing the contaminating material formed on the surface of the optical elements. However, removing contaminating material formed on the surface of an optical element is well known per se. For example, Engelsberg teaches a method/apparatus of removing surface contaminants attached to a substrate surface by irradiating the substrate with light (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of King and Engelsberg to obtain the method of strong an optical device as specified in claims 50, 54-57 for the purpose of suppressing the deterioration in transferring a pattern from a mask onto a substrate caused by the contaminants formed on the surface of the optical elements and thus improving the quality of the images.

Allowable Subject Matter

5. Claims 51-53 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations

of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: while the prior art of record teaches removing contaminants attached to an optical surface by irradiating the surface with light and flowing the gas over surface but does not disclose specific steps and satisfying conditions as recited in claims 51-53.

Conclusion

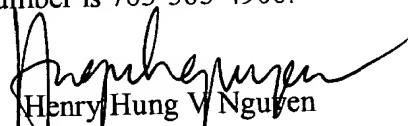
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishi (U.S. Pat. 5,854,671) discloses a scanning exposure apparatus having alignment mark detection device and projection optical system characteristic measuring device.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Hung V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.


Henry Hung V Nguyen
Examiner
Art Unit 2851

hvn
May 17, 2002